

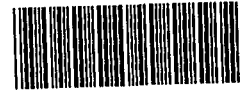
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MEMORANDUM

TO: TOM MIX, EPA REGION IX RPM
FROM: JIM GOODRICH, SITE MANAGER
CC: TOM BAILY, REM II REGIONAL MANAGER
CLAY McCURLY, CENTRAL FILES
DATE: NOVEMBER 6, 1985
WORK ASSIGNMENT: 168-9LA7.0
DOCUMENT CONTROL: 279-WP1-IO-BVVQ-1
SUBJECT: INITIAL SITE INSPECTION

1.0 OBJECTIVES

On 15 October 1985, Jim Goodrich left Los Angeles for Guam and arrived on the morning of 17 October 1985. He departed Guam on the evening of 18 October 1985. During his stay on Guam, he fulfilled the following objectives:

1. Meeting with Jim Branch, Administrator of the Guam EPA to discuss a) their past and present involvement at Ordot Landfill; b) the work presently being done by the Water and Energy Research Institute (WERI) of the University of Guam; and c) their anticipated involvement with U.S. EPA with regard to Ordot.
2. Review all data related to Ordot contained in the Guam EPA files, and make copies of those files which will assist REM II in the preparation of the various plans.
3. Meeting with Bill Zolan of WERI to review the work being done by them for GEPA at Ordot.
4. Meeting with Gregg Ikehara of the USGS office in Guam to discuss the geology and hydrogeology relative to Ordot.
5. Visit Ordot Landfill site and the area downstream of the site.
6. Assess whether Ordot Landfill should be studied further to determine the degree of environmental hazard and the need for implementation of remedial measures.

2.0 SITE BACKGROUND

Ordot Landfill is located in the central part of Guam, approximately 2.5 miles south of Agana. The landfill has been used since at least the 1930's. It was used by both the Japanese and United States military occupational forces during World War II. Since the war, the landfill has

primarily received municipal wastes; but because there are no other major civilian waste disposal sites on the island, it also receives commercial and industrial waste. The nature and amount of waste which has entered the site has not been recorded.

Although the site is located in the volcanic region of Guam, it is immediately adjacent to the limestone area to the north, which is the sole source aquifer for the island. Air photo analysis and slope debris suggest that limestone may underlie the site, but this has not been substantiated. If limestone underlies the site, then leachate from the site may be moving north into the sole source limestone aquifer of northern Guam.

A fault separates the limestone and volcanic provinces in Guam (as shown on Figure 1). A spring issues from the fault along the northwestern boundary of the site and flows southeast into and beneath the landfill and emerges on the south side of the site, where it flows into the Lonfit River. Flow from this spring varies according to the season. During the site visit, which was in the wet season, flow was at least 100 gallons per minute (gpm). The spring water flowing from beneath the landfill was foaming during the site visit. Leachate, probably derived from rainfall infiltrating through the landfill, flows out of the landfill around its perimeter. As a result, the valley bottom immediately south of the site is in a wetlands condition. Some leachate streams contain gas bubbles and grease, as well as foam. Water quality analyses done by Guam EPA indicate that most heavy metals are present in the leachate. Organics were not tested for by GEPA.

3.0 HEALTH AND SAFETY

The primary health problem associated with site entry is odor from rotting garbage. Odor problems are alleviated by use of a carbon coated face mask. Because of rainfall the night before the site visit, odor was not a problem near the site and site access was restricted because of mud. Because the actual site was not entered, face masks and overboots were not used. However, during the dry season, face masks and overboots will probably be necessary, even during the off-site work.

4.0 PERSONNEL AND RESPONSIBILITIES

The site was visited by Jim Goodrich, the REM II Site Manager, Jim Canto, GEPA department head, Paul L., GEPA staff engineer, and Bill Zolan and Russ C. of WERI. WERI staff conducted the site tour.

5.0 EQUIPMENT

Monitoring equipment was not taken to the site.

6.0 ACCOUNT OF INSPECTION

The site visit was divided into three parts. In the first part, the inspection party visited the downstream part of the site area to look at the monitoring wells being constructed by WERI and to observe the leachate streams leaving the site. Inspection away from the road was restricted because of mud from the previous night's rain, and jungle. In addition to the leachate streams, the team observed a pond which covered about a quarter-acre and received its inflow from rainfall runoff and leachate leaving the site.

The inspection party attempted to drive onto the landfill site, but mud, caused by rainfall, prohibited passage. However, while at the entrance to the site, approximately ten sealed drums were noted. We presumed that these drums would be buried in the landfill by the Catapillar tractor. The drums had no apparent markings.

The third part of the visit was an overview of the site, looking from a hill on the northern site boundary. We were unable to visit the source of the spring because of rainy weather and mud.

The inspection tour lasted about 2 hours.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the visit to Guam and the Ordot Landfill, the following conclusions were reached:

1. Leachate derived from infiltrating rainfall and spring underflow is leaving the Ordot site as surface flow and is entering the Lonfit River.
2. Grease, gas bubbles, and foam are contained in the leachate leaving the site, but the degree of contamination is unknown.
3. Although volcanic rocks, which are relatively impermeable, are supposed to underlie the site, inconclusive air photo analysis suggest that highly permeable limestone may underlie at least a portion of the site. If limestone underlies the site, then infiltrating leachate may flow north into the aquifers of northern Guam.
4. The field work being conducted by WERI will not be sufficient to recommend remedial alternatives and conduct a feasibility study, if this is needed.
5. Insufficient data are available to prepare a focused Remedial Investigation Work Plan or the associated Project Operations Plans.
6. The Guam EPA has expressed a strong interest in continuing their efforts in conducting the community relations work for the Ordot Landfill site.

Based on these conclusions, CDM makes the following recommendations for the Ordot Landfill site:

1. A Preliminary Assessment (PA) should be performed prior to completing the Remedial Investigation Work Plan and its associated Project Operations Plans. The PA should be done to establish the basis for further work and should focus on determining: a) the quality of the leachate leaving the site; and b) the geology of the rocks which surround the site. Approximately ten (10) leachate samples should be collected and analyzed for all Priority Pollutants at a CLP laboratory. A water sample should also be collected from the well near Washington Junior High School and analyzed for Priority Pollutants. A D8 or D9 Caterpillar tractor should be used to clear vegetation in selected areas around the site and expose unweathered rocks to determine the composition of the rocks. Conducting this limited PA will allow REM II to determine if Ordot is an environmental problem, and if so, to define a focused scope of work for the RI Work Plan. Conducting the project in this manner will save both time and money in the long run.
2. A Community Relations Plan should not be written and all community relations activities should be done by the Guam EPA.